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ENTEROCLYSIS OF ICE-WATER  
IN THE  
TREATMENT  
OF  
INTESTINAL DISEASES OF CHILDREN.

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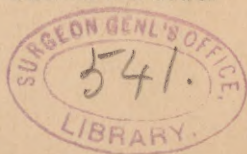




## Enteroclysis of Ice-Water in the Treatment of Intestinal Diseases. of Children.

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THE object of this paper is to call attention to a mode of treatment of diseases of the intestines not generally known or practised. The treatment of diseases of the bowel by water is by no means of recent origin. G. Simon (*Archiv für Klinische Chirurgie*, von Langenbeck, xv., Heft I., pp. 122, 123) was, however, the first to prove that water injected through the rectum, rapidly diffused itself through the bowel even to the small intestines, without harm to the patient. The method in which this can best be accomplished is to place the patient on the left side and elevate the hips. The knee-elbow position is also a very good one to accomplish the same object. Mader (*Allgem. Med. Centralzeitung*, Berlin, 1887, No. 27) proved upon the cadaver that by injections of even less than two quarts of water, the ileo-cæcal valve was reached, and that by a forced injection of the same quantity of water, even the bowel beyond the valve has been reached. The method which, however, is to be preferred is that in which the water is allowed to slowly flow into the bowel, and attempts made to retain the water in the bowel





for some little time. A simple rectal syringe is all that is required and not the elaborate irrigator which has been patented in Germany by Komp. Forced injections should never be used, nor should the water be allowed to flow quickly into the bowel, as unpleasant and even dangerous symptoms have been seen to follow this procedure, such as headache, abdominal cramp (principally in the region of the umbilicus), vomiting, and severe symptoms of shock. No death has ever followed this method, as far as I have been able to learn. It is, however, a procedure which should always be carried out with care, and it should always be remembered that harm can ensue in the hands of an inexperienced and ignorant operator.

Various substances, antiseptic and otherwise, have been injected into the bowel. My plan has been to use ice-water. With its use I have observed the most beneficial effects in the treatment of intestinal diseases of children. My experience has been largely with children, and I have made an effort to treat only cases by this method which have proved very obstinate, and where other remedies usually useful have failed. A fair illustration is the following :

Baby S. L., aged 2, has been troubled with vomiting and diarrhœa for two weeks. Vomiting took place immediately after taking food, and was accompanied by considerable retching. The stools varied from seven to twelve daily, and were at first tarry and offensive, later turning to yellow and a light clay color. The patient rapidly lost flesh and strength, and refused to take food. Fever

was constantly present, ranging from  $100^{\circ}$  to  $102^{\circ}$  F., but very irregular. The patient was given the ordinary chalk mixture, bismuth, tannic acid, opium, and salol, without the slightest effect. The only remedy that relieved the symptoms at all was salol. Under the use of this remedy the stools were reduced to five, and even four, daily. It had, however, not the slightest effect on the temperature. Taking into consideration that the ordinary remedies had proven ineffective, the unwillingness and perhaps inability of the child to swallow, and the amount of fever present, I ordered injections of ice-water, beginning at first with a pint and increasing to a quart every four hours. This treatment was not at all painful, and the child offered no opposition. An ordinary fountain-syringe was used, the nozzle introduced into the rectum and the ice-water allowed to slowly trickle into the bowel. As the water came away, solid particles of fæces about the size and shape of a split pea were seen in the evacuation. The water had a slimy look and was quite offensive. The temperature taken before and after the injection showed a fall of  $3^{\circ}$ ,—from  $102^{\circ}$  to  $99^{\circ}$ . The child seemed relieved and soon fell asleep. This treatment was repeated every four hours, until the child had five injections. On the second day the patient had three stools, which had lost their offensiveness and were becoming more solid. On the following day only two stools. The temperature never rose again above  $99\frac{1}{2}^{\circ}$  and the child took nourishment quite freely. There has been no return of the diarrhœa.

This case is not an isolated instance. I

have nine other cases to report in which ice-water injected into the bowel was the only remedy employed. All were speedily relieved and cured by this procedure. There is no necessity of detailing the cases, as the history quoted above is a fair illustration of all the rest. All began with vomiting and purging, more or less fever, anorexia, insomnia, etc. Rapid wasting is also a marked symptom of this affection and constitutes one of the chief dangers. Naturally there is no difficulty as to diagnosis, we are dealing with acute gastro-intestinal catarrh or cholera infantum. This disease is due to an accumulation of fæces in the intestinal tract undergoing decomposition, leading to large accumulations of bacilli and their ptomaines, which are subsequently reabsorbed and taken into the system, and produce a fixed set of symptoms already enumerated. The principal cause of the entire trouble is then in the intestine, and the chief aim of the treatment consists in removing the cause. It has been demonstrated that this cannot be accomplished by means of cathartics. It can, however, be safely undertaken by copious injections of ice-water according to the method already described. Very few children will resist or offer opposition, and the method is very easy of application. The quantity of water that should be employed will vary with the age of the child. About one pint of water for a child six months old will be found to be sufficient. This amount should be increased to a quart for children two years of age. It is rarely necessary to give larger quantities than this.



This affection is much less frequent in breast-fed children than in children that are artificially fed. It is, therefore, imperative in treating children that are brought up by the bottle, and especially in warm weather, to give them nothing but sterilized milk.

That ice-water injections materially reduce the temperature I have had occasion to observe in other diseases. In a case of scarlet fever, in a child 9 years old, this treatment was used to reduce the temperature. After injecting one quart of ice-water, the temperature fell from  $105\frac{1}{2}^{\circ}$  to  $101^{\circ}$ , and remained so for six hours. Local sponging and bathing did not cause nearly the same fall of temperature, the maximum fall being about  $1\frac{1}{2}^{\circ}$ . In enteric fever of adults, I have also seen the same decrease in temperature following the injection of ice-water. The Germans have been using injections of water by the bowel for some time in typhoid fever, and it is quite the rule to reduce temperature in this way.

I have used ice-water injections largely, and have never seen any ill effects follow. On the contrary, the patient seemed to enjoy the cooling effects of the ice-water. For the treatment of intestinal diseases of children, and especially for the midsummer diarrhœas, accompanied by vomiting, loss of flesh, and fever, it seems almost a specific. It has, to my mind, some very great advantages. The digestion of an already enfeebled stomach is not interfered with by prescribing remedies which are often in themselves difficult to digest and assimilate. Besides, the remedy may, in itself, be vomited, and so no benefit

obtained. Secondly, the bowel is mechanically cleansed of masses of irritating, decomposing fæces, containing bacilli and their ptomaines, which, by their reabsorption into the system, give rise to dangerous, and often fatal, consequences. Lastly, the temperature is materially reduced by a harmless and certain therapeutic agent.











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